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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|-----------------------|------------------|
| 09/972,100 | 10/05/2001 | Andrew Rankin | LSI30US01(LSI 01-225) | 4348 |

7590 12/18/2003
LSI LOGIC CORPORATION
MAIL STOP D-106
1551 McCARTHY BOULEVARD
MILPITAS, CA 95035

EXAMINER

THOMPSON, ANNETTE M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2825

DATE MAILED: 12/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/972,100

Applicant(s)

RANKIN, ANDREW

Examiner

A. M. Thompson

Art Unit

2825

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9 and 17-25 is/are allowed.
- 6) ☒ Claim(s) 10-16, 26 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Applicant's Amendment B to 09/972,100 has been examined. The specification is amended. Claims 26 and 27 are added. Claims 1-27 are pending.

1. Applicant's Amendment is persuasive in part. The pertinent rejections/objections of the prior office action are incorporated herein.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. Applicant's claims are primarily directed to a method that includes a *Verilog to Spice* converter and a *Spice to Verilog* converter. Appropriate correction is required.

The following title is suggested: Design Methods Using Spice to Verilog and Verilog to Spice Translation.

Drawings

3. Figures 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. For Figure 1, reference Lin et al., U.S. Patent 5,581,562, Figure 1B.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Rejection of claims 10-16

6. **Claims 10-16** are rejected under 35 U.S.C. 102(b) as being anticipated by the Michael Naum et al. (Naum) paper entitled Automatic Functional Model Validation Between Spice and Verilog. The Naum paper outlines a method that uses SPICE models in conjunction with Verilog models to validate the functionality of a Verilog library.

7. Pursuant to claims 10-16, the Naum paper §§ II and IV. discloses the limitations of these claims.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Rejection of claims 26 and 27

9. **Claims 26 and 27** are rejected under 35 U.S.C. 102(e) as being anticipated by the Zebardast et al. paper entitled SP2V: Accelerating Post-Layout Spice Simulation Using Verilog Gate-Level Modeling.

10. Pursuant to claims 26 and 27, Zebardast teaches converting a Verilog block design to Spice format and simulating the design.

Allowable Subject Matter

11. Claims 1-9 and 17-25 are allowed.

12. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or suggest a method of circuit design wherein one function block of the design, designed in Verilog and converted to SPICE, is combined and simulated with another function block of the design already designed in SPICE .

Remarks

13. Applicant asserts lack of knowledge for labeling Figure 1 --Prior Art--. However, the figure 1 process disclosed by Applicant as a non-specific "overview of a design process", is well known in the art of integrated circuit design. See e.g., U.S. Patent 6,470,482 to Rostoker et al., in particular Figures 9 and 17 and Lin et al. U.S. Patent 5,581,562, cited supra.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please reference the PTO-892 for a complete listing.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to A.M. Thompson whose telephone number is (703) 305-7441. The Examiner can usually be reached Monday thru Friday from 8:00 a.m. to 5:00 p.m.. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Matthew S. Smith, can be reached on (703) 308-1323.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956 or the Customer Service Center whose telephone number is (703) 306-3329.

17. Responses to this action should be mailed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306, (for all **OFFICIAL** communications intended for entry)

Hand-delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).


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